

curious point that in certain localities in Florida growers refuse to spray for the *Mytilaspis* scales on account of the fact that spraying increases their number. Experiments which he himself had made indicated the truth of this general idea, particularly when the spraying was done with fungicides. He was convinced that the fungus known as *Ophionectria coccicola* is a true scale parasite and that this fungus is destroyed by the spraying, allowing the scales to multiply unchecked. From the practical standpoint he considered that the *important* insect enemies of the orange tree, viz., the red scale and the white fly, have been greatly lessened in number and that only the unimportant ones were unharmed by the freezes. Mr. Marlatt said, however, that insects previously considered unimportant might now, and probably would, become important, owing to the enfeebled condition of the trees. This was particularly apt to be the case with bark-boring beetles. Mr. Ashmead agreed with Mr. Marlatt and stated that in his own experience of many years in Florida he had found very serious damage to result from bark-boring beetles following severe freezes. He also stated that after a check to the growth of a tree it might become attacked by new parasites which gradually might change their food-habit and become enemies of healthy trees.

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JUNE 6, 1895.

President Ashmead in the chair, and the following members also present: Messrs. Gill, Hubbard, Marlatt, Benton, Patten, Judd, Howard, Waite, Heidemann, Swingle, E. F. Smith, and Fernow.

—Mr. Ashmead read the following paper:

DISCOVERY OF THE GENUS *ELASMOSOMA*, RUTHE, IN AMERICA.

By WILLIAM H. ASHMEAD.

The genus *Elasmosoma* was described by J. F. Ruthe, in a paper entitled "Beiträge zur Kenntniss der Braconidæ," published in Vol. II of the *Berliner Entomologische Zeitschrift*, 1858, with one species, *E. berlinense*, and up to the present time the genus has remained monotypical.

The genus belongs in the subfamily Microgasterinæ, in the family Braconidæ, and Ruthe has recorded that his species was captured by Prof. Schenck with *Formica rufa*. He was of the opinion it was parasitic on this ant.

Ruthe briefly characterized the genus as follows :

Maxillary palpi 2-jointed, labial palpi unjointed. Antennæ 14-jointed, the scape abbreviated. Eyes smooth (bare). Occiput flat, the vertex narrowed. Front wings with 3 inconstant cubital cells, the radius evanescent towards apex. Abdomen depressed; ovipositor hidden.

Soon after my return from Germany, in 1890, among some chalcidids taken by Mr. E. A. Schwarz at Washington in 1889, I discovered a curious little ♀ microgasterine with a long abdomen, short, 13-jointed antennæ and a peculiar wing venation which I was unable to place in any known genus and to which I gave the MS. name *Paramirax schwarzi*, placing it away in my cabinet for future study.

Some months ago a ♂ of this peculiar braconid, with 14-jointed antennæ, was received from Mr. Carl F. Baker, taken at Fort Collins, Colorado, and only a few nights ago I finished studying it and the one taken by Mr. Schwarz and arrived at the conclusion that my MS. genus *Paramirax* would not hold, since it was identical with *Elasmosoma* Ruthe, the difference in the number of joints in the first species not being sufficient to justify the erection of a new genus.

It is very remarkable that, the very next morning after reaching this conclusion, Mr. Pergande sent word from his office, if I had time to spare, he would like to see me.

Judge of my surprise, therefore, when he brought out two specimens of a third species of this rare genus, mounted on a single pin with an ant, two myrmecophilous beetles, and a myrmecophilous cricket and asked me what it was.

Having just finished studying my own specimens, I replied at once, "Why, that is a species of the rare genus *Elasmosoma* Ruthe. Where did you take it?"

Mr. Pergande then told me that the day before, which was a holiday, he went out collecting myrmecophilous insects and that while inspecting the nest of *Camponotus melleus* Say, which was under a large stone, he was pestered with some little flies which were quite numerous and kept flying into his eyes and ever and anon alighting among the ants, during his examination of the nest. At first he paid no attention to them, mistaking them for small oscinids; but they were so persistent in alighting among the ants that finally his curiosity was aroused and he determined to find out what they were. Wetting the tip of his finger with his mouth, he captured two, placing them in a vial with the

intention of examining and making out the species on his return home. When he got home and found out what a rare and curious insect he had found, he was quite surprised, and regretted he had not taken more.

Is the genus parasitic on the ants or on the myrmecophilous beetles?

It is truly significant that both in Europe and in America the genus is found only associated with ants, but as yet we have no authentic information as to the parasitic habits of the species. We trust Mr. Pergande will continue his observations on the species discovered by him and definitely settle the question as to its parasitism.

All other genera in the Microgasterinæ are parasitic only on lepidopterous larvæ, although two or three species of *Apanteles* and *Microgaster* are recorded as having been bred from rhynchophorous beetles.

The specimens spoken of above represent three distinct species and may be tabulated as follows:

TABLE OF SPECIES.

Antennæ 13-jointed..... 2
 Antennæ 14-jointed.

Antennæ entirely and middle and hind coxæ, black, rest of legs pale ferruginous; abdomen as long as head and thorax united.

E. bakeri.

2. All coxæ yellowish-white.

Abdomen twice as long as the head and thorax united, subpetiolated, the segments 1, 3, 4, 5, and 6 longer than wide; two basal joints of antennæ and legs pale yellowish.....*E. schwarzi*.

Abdomen only one-third longer than the head and thorax united, the dorsal segments 2 and 3 tinged with rufous, all the segments wider than long; two basal joints of antennæ brown; legs pale yellowish.....*E. pergandei*.

(1) *Elasmosoma bakeri* sp. n.

♂.—Length 2.5 mm. Black, subopaque, shagreened, the vertex with transverse striæ, the metathorax finely rugulose, the abdomen granulated. Antennæ 14-jointed, black, pubescent, extending to base of abdomen and tapering toward tips, the scape and pedicel small, not as thick as, and both united not as long as the basal joint of flagellum, joints of flagellum all longer than thick and gradually become more slender towards apex. Trophi whitish. Thorax without parapsidal furrows, flattened on disk in front of scutellum; axillæ not well separated, the scutellum laterally and the post-scutellum striated. Metanotum finely rugulose, not carinate. Wings whitish hyaline, the costa and stigma brown, the outer edge blackish, the internal nervures hyaline, subobsolete. Legs pale ferru-

ginous, with the middle and hind coxæ black, the hind tibial spurs nearly as long as the basal joint of tarsi. Abdomen as long as the head and thorax united, elongate oval, depressed with pale colored ventral fold on first three segments, the surface above granulated, the segments 2 and 3 subequal, wider than long, the following much shorter.

Hab.—Fort Collins, Colorado.

Type in Collection Ashmead.

Described from 1 ♂ specimen, received from Mr. Carl F. Baker, and in honor of whom the species is named.

(2) *Elasmosoma schwarzi* sp. n.

♀.—Length 3 mm. Black, subopaque, shagreened, with the head less distinctly sculptured than the preceding species, the vertex shining and very delicately transversely aciculated. Ocelli white. Eyes large, strongly convergent anteriorly. Two basal joints of antennæ, trophi and legs, white or yellowish-white, flagellum brown, the first joint being a little shorter than the scape and pedicel united. Wings hyaline, the costa and stigma dark brown. Abdomen subpetiolate, much elongated and twice as long as the head and thorax united, with parallel sides, all the segments, except the second and the last two, are longer than wide, the second is a little wider than long, the last two very short; the upper surface is flat, finely shagreened black; beneath there is a ventral fold which is more or less tinged with piceous.

Hab.—Washington, D. .

Type in Collection Ashmead.

Described from 1 ♀ specimen and dedicated to Mr. E. A. Schwarz, who captured it on the outskirts of Washington, July 15, 1889.

(3) *Elasmosoma pergandei* sp. n.

♀.—Length 2 mm. Black, subopaque, shagreened; clypeus and mandibles, except teeth, brownish-yellow; palpi, middle and anterior legs and hind coxæ, yellowish-white; hind legs, except tarsi, brownish-yellow, their tarsi brown or fuscous. Wings grayish-hyaline, the costa and stigma dark brown, the internal veins lighter brown or brownish-yellow, the radial cell closed and indistinctly separated by a faint cross-vein into two cells, the veins, however, only distinctly seen by transmitted light. The head is transverse, a little wider than the thorax, the frons and vertex finely transversely shagreened, the eyes strongly faceted, bare, convergent below and reaching almost to the base of the mandibles. Antennæ 13-jointed, filiform, tapering toward apex, black, with the scape and pedicel brown; the scape is not longer than the first joint of flagellum, the joints of the flagellum being a little longer than thick. Thorax ovate, finely shagreened, the collar not visible from above, the metanotum with some

irregular raised lines. Abdomen one-third longer than the head and thorax united, shagreened, segments 1, 2 and 3 subequal in length, the first very slightly the longest, segment 4 two-thirds as long as the third, segment 5 a little shorter, the following still shorter, subequal. The abdomen is black but the second and third dorsal segments are tinged with rufous.

Hab.—Washington, D. C.

Described from 2 ♀ specimens, taken by Mr. Theo. Pergande, in the nests of *Camponotus melleus* Say, May 29, 1895.

The paper was briefly discussed by Messrs. Marlatt and Howard, the former bringing up the point of the difficulty of associating males and females in collected specimens, *apropos* to a question by the latter as to the possible association of the Colorado male with the District of Columbia female.

—The Corresponding Secretary read the following paper by Mr. F. M. Webster :

NOTES ON THE DISTRIBUTION OF SOME INJURIOUS INSECTS.

By F. M. WEBSTER.

In his very interesting paper, "Notes on the Geographical Distribution within the United States of certain Insects Injuring Cultivated Crops" (Proc. Ent. Soc. Wash., Vol. III, No. 4), Mr. L. O. Howard has attempted to bring together some data to show that some of our injurious species are more or less restricted in their habitat to certain life-zones, as mapped out by Dr. Merriam. In doing this he has been obliged to criticise some statements made by myself, first in *Science* for February 3, 1893, and later in Bulletin 51, Ohio Agricultural Experiment Station, where I gave the distribution of some of these species in Ohio, with such information as I was able to obtain relative to their probable introduction and subsequent diffusion. Knowing, as I do, that Mr. Howard is as sincere in his position and as desirous of getting at the truth as I am myself, it appeared to me that it would be but just to myself and all interested to give the facts upon which my statements were based.

In August, 1892, at the meeting of the Association of Economic Entomologists at Rochester, N. Y., specimens of *Crioceris asparagi* were found near the city, and this was, at that time, supposed to be their extreme western point of occurrence. A year later I received specimens, in all stages of development,